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(1) Transmittal Document; and

(2) Appellants' Brief.

Serial No. 09/838,425; Attorney Docket No. FR920000031US1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Bauchot et al.**

Serial No.: **09/838,425**

Filed: **April 19, 2001**

For: **Method and System in an Electronic Spreadsheet for Comparing Series of Cells**

§ Group Art Unit: **2176**

§

§ Examiner: **Stevens, Robert**

§

§ Attorney Docket No.: **FR920000031US1**

§

50170
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- Appellants' Brief (37 C.F.R. § 41.37)

A fee of $500.00 is required for filing an Appellants' Brief. Please charge this fee to IBM Corporation Deposit Account No. 09-0447. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to IBM Corporation Deposit Account No. 09-0447. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to IBM Corporation Deposit Account No. 09-0447.

Respectfully submitted,

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Docket No. FR920000031US1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Bauchot et al.**	§	Group Art Unit: **2176**
Serial No. **09/838,425**	§	Examiner: **Stevens, Robert**
Filed: **April 19, 2001**	§	Customer No. **50170**
For: **Method and System in an Electronic Spreadsheet for Comparing Series of Cells**	§	

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By: Rebecca Clayton
Rebecca Clayton

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

APPELLANTS' BRIEF (37 C.F.R. § 41.37)

This Appeal Brief is in furtherance of the Notice of Appeal filed April 26, 2005 (37 C.F.R. § 41.31).

The fees required under § 41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying Transmittal of Appeal Brief.

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I. Real Party in Interest

The real party in interest in this appeal is the following party: International Business Machines Corporation.

II. Related Appeals and Interferences

An Appeal Brief was filed in related and co-pending U.S. Patent Application Serial No. 09/838,420 on May 17, 2005. The Appeal Brief in 09/838,420 addresses similar issues with regard to some of the rejections as addressed in the present Appeal Brief. At the present time, however, no decision has been rendered in the Appeal of 09/838,420.

III. Status of Claims

The status of the claims involved in this proceeding is as follows:

1. Claims canceled: NONE
2. Claims withdrawing from consideration but not canceled: NONE
3. Claims pending: 1-7
4. Claims allowed: NONE
5. Claims rejected: 1-7

The claims on appeal are: 1-7

IV. Status of Amendments

A Response to the Final Office Action was filed on March 22, 2005. The Response did not include any amendments to the claims. The Advisory Action mailed April 8, 2005 indicates that the Response will be entered for purposes of appeal. Thus, the status of the claims is as set forth in the Response filed March 22, 2005.

V. Summary of Claimed Subject Matter

The present invention relates to the field of information processing by digital computers (e.g., computer 100 in Figure 1A). More particularly, the present invention relates to a mechanism, in an electronic spreadsheet (e.g., see Figure 2), for comparing two series of cells (e.g., see Figures 3A and 3B). A series of cells comprises one or a plurality of cell ranges, where a cell range may comprise one or a plurality of cells (page 8, lines 25-30).

The mechanism for comparing two series of cells includes defining a Boolean attribute that may have a first or a second value (page 9, lines 1-2). The first value of the Boolean attribute is assigned to each cell of a first series of cells (page 9, lines 3-4; step 505 in Figure 5). The second value of the Boolean attribute is assigned to each cell of a second series of cells (page 9, lines 5-6; step 505 in Figure 5). A determination is made, in a first operation, as to whether all the cells of the first series of cells have the same first value of the Boolean attribute, share the same second value of the Boolean attribute, or do not share a same single value of the Boolean attribute (page 9, lines 7-11; steps 506-509 in Figure 5).

The first value of the Boolean attribute is again assigned to each cell of the first series of cells (page 9, lines 12-13; step 510 in Figure 5). A determination is made, in a second operation, as to whether all the cells of the second series of cells share the same first value of the Boolean attribute, share the same second value of the Boolean attribute, or do not share a same single value of the Boolean attribute (page 9, lines 14-18; steps 511-514 in Figure 5).

A determination is then made as to whether the first series and the second series are the same, are disjoined, overlap, or are included one into the other by comparing results of the first operation and the second operation (page 9, lines 19-22; step 515 in Figure 5). If all the cells of the first series share the same first value of the Boolean attribute in the first operation and if all the cells of the second series share the same second value of the Boolean attribute in the second operation, the first series and the second series are disjoined (page 9, lines 23-28; step 518 in Figure 5). If all the cells of the first series share the same second value of the Boolean attribute in the first operation and if all the cells of the second series share the same first value of the Boolean attribute in the second operation, the first series and the second series are the same (page 9, line 29 to page 10, line 2; step 519 in Figure 5). If all the cells of the first series share the same second value of the Boolean attribute in the first operation and if all the cells of the second series

do not share the same single value of the Boolean attribute in the second operation, the first series is included in the second series (page 10, lines 3-8; step 520 in Figure 5). If all the cells of the first series do not share the same single value of the Boolean attribute in the first operation and if all the cells of the second series share the same first value of the Boolean attribute in the second operation, the second series is included in the first series (page 10, lines 9-14; step 517 in Figure 5). If all the cells of the first series do not share the same single value of the Boolean attribute in the first operation and if all the cells of the second series do not share the same single value of the Boolean attribute in the second operation, the first series and the second series overlap (page 10, lines 15-20; step 516 in Figure 5).

In one exemplary embodiment of the present invention, a computer system (100) is provided having means (101 and 102 and/or 107 having instructions associated with element 152) for defining a Boolean attribute, said Boolean attribute having a first and a second value, means (101 and 102 and/or 107 having instructions associated with element 152) for assigning the first value of said Boolean attribute to each cell of a first series of cells, and means (101 and 102 and/or 107 having instructions associated with element 152) for assigning the second value of said Boolean attribute to each cell of a second series of cells. In addition, the computer system (100) may further include means (101) for determining in a first operation whether all the cells of said first series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share single value of said Boolean attribute. A means (101 and 102 and/or 107 having instructions associated with element 152) for again assigning the first value of said Boolean attribute to each cell of the first series of cells and means (101) for determining in a second operation whether all the cells of the second series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share a same single value of said Boolean attribute may also be provided in the computer system (100). Means (101) for recording intermediary information from the first operation and the second operation in a comparison table, stored in a memory (102) of a computer are also provided. Means (101) for determining whether the first series and the second series are the same or not by comparing results of the first operation and the second operation if all the cells of the first series share the same second value of said Boolean attribute in said first operation and if all the cells of the second series share the same first value of said Boolean attribute in said second operation, the first series and the second series are the same.

VI. Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection to be reviewed on appeal are as follows:

(1) Claim 1-7 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to comply with the enablement requirement;

(2) Claim 7 stands rejected under 35 U.S.C. § 112, second paragraph as being indefinite for allegedly failing to particular point out and distinctly claim the subject matter which Appellants regard as the invention;

(3) Claims 6-7 stand rejected under 35 U.S.C. § 101 as being allegedly directed to non-statutory subject matter; and

(4) Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kelly, Using Microsoft Excel 97, 3rd Edition, Que Corp., Indianapolis, IN, 1998, pages 138-144 and 154-189 in view of Deitel et al., C++: How to Program, 2nd Edition, Prentice Hall, Upper Saddle River, NJ, 1994, pages 10, 106-110, 147, 243-244, 256-262, 448, 473-479, 483-485, 707-730, 981-987 and 1043-1045, and further in view of the Microsoft Computer Dictionary, 4th Edition, Microsoft Press, Redmond, WA, 1999, pages 29, 56-58, 79, 229, 272, 420 and 434.

VII. Argument

A. Rejection of Claims 1-7 Under 35 U.S.C. § 112, First Paragraph

The Final Office Action rejects claims 1-7 under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement. The Final Office Action states that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Essentially, this rejection is based on the same misunderstanding by the Examiner as set forth in the objection to the drawings which objects to Figure 5 stating that the algorithm depicted is incorrect because the algorithm always results in the same outcome. Specifically, the Examiner states that the outcome of the algorithm is always

True/False/False/True with the result being "disjointed." Appellants respectfully disagree.

Appellants respectfully submit that the Examiner is disregarding the second operation in step 505 and how it relates to the first operation in step 505. Basically, the Examiner is failing to realize that the whole purpose of the present invention is to determine whether series A is within series B, series B is within series A, the series are disjoined, the series overlap, or the series are the same series. Thus, some cells that are in series A may also be in series B and some cells in series B may also be in series A. Therefore, just because step 505 states that the temporary value for cells in series A are set to True does not mean that in step 506 all of the temporary values of cells in series A are set to True (although this is one possibility). Moreover, there is no guarantee that there are some cells in series A that have a temporary value of False. It all depends on the relationship between cells in series A and cells in series B. The Examiner's view completely disregards the various possible relationships between series (see Figures 3A and 3B of the present specification, for example) and how these relationships influence the setting of the temporary variables in the cells of the two series using the operations in step 505 of Figure 5. That is, in the second operation, the temporary value for cells that are in series B is set to False. As a result, if there is a cell that is in both series A and series B, even though the first operation set the temporary value to True, the second operation of step 505 resets this temporary value to False. Thus, by the time step 506 is performed, the temporary value for such a cell is set to False, not True as the Examiner contends. If the cell is not in both series A and series B, then the temporary value will remain True.

Attached in the Evidence Appendix are a set of diagrams illustrating the steps of Figure 5 as applied to one example. The diagrams shown in the Evidence Appendix were generated based on a basic example of a relationship between a first series of cells and a second series of cells. The diagrams show how each step of the flowchart in Figure 5 of the present specification operate to generate a result that matches the original relationship and thus, the algorithm shown in Figure 5 operates correctly. The drawings were generated solely from the present specification based on an initial example relationship between two series of cells. Thus, just as Appellants have done, one of ordinary skill in the art could easily take the present disclosure and illustrate how the present invention generates a correct result for any comparison of series of cells in a spreadsheet. Therefore, as shown hereafter, the present specification clearly enables one of ordinary skill in the art to make and use the invention as recited in the claims.

It should be appreciated that the example shown in the Evidence Appendix is just one example in which series B is in series A. Similar examples can be generated for other example relationships in which series A and series B are disjoined, series A and series B are the same, etc. Thus, even though the example shown hereafter results in values of True/True/True/False, this does not mean that every result of the mechanism shown in Figure 5 of the present specification is True/True/True/False.

As shown in the Evidence Appendix, at step 504 the data structure shown in Figure 4 of the present specification is initialized such that the values of Atrue, Afalse, Btrue, and Bfalse are set to "False." Then, in step 505, the temporary value for cells in series A is set to True, and thereafter cells that are in series B are set to False. In the particular example depicted, series B is within Series A. That is, Series A consists of cells 1, 2, 3, 4, 5 and 6. Series B consists of cells 2, 3, 4 and 5, which are also part of Series A. As such, the temporary values of cells 2, 3, 4 and 5 are first set to True because they are in Series A (left side of drawing) and, in the second operation of step 505, are reset to False because they are in Series B (right side of drawing). This results in some of cells 1-6 having temporary values of "True" and some of the cells 1-6 having temporary values of "False."

Thereafter, in steps 506-509 because some of the cells have a temp value that is set to True, i.e. cells 1 and 6, and some cells whose temporary value is False, the result is "Undetermined." As a result, the Atrue and A false elements of the data structure of Figure 4 are set to "True."

Then, in step 510, the temp value for cells in Series A are reset to a value of "True." In steps 511-514 a determination is made as to whether the temp value for all of the cells in Series B are set to True, False, or are Undetermined because some are set to True and some are set to False. In the depicted example, because all of the cells in Series B are also within Series A, when setting the temp value of cells in Series A to "True," all of the cells in Series B are set to "True." Thus, in step 510 it is determined that the value of the temp value for cells in Series B is "True" and therefore, Btrue is set to "True" (step 511). The resulting data structure is shown and has values as follows: Atrue = True, Afalse = True, Btrue = True, and Bfalse = False. This particular set of values corresponds to the branch leading to step 517, i.e. Series B is in Series A (which is the correct answer).

Based on the above, it is clear that by way of the dual operations in step of 505, and the other operations set forth thereafter, depending on whether the cells of one series include cells from another series, various ones of the possible results may be obtained. The Examiner states that the result is always the same regardless of what series are being compared, i.e. the result is always "disjointed." However, Appellants have just shown how a result of "Series B in Series A" may be obtained using the same algorithm shown in Figure 5 of the present specification. Hence, the Examiner's assertion is simply incorrect.

Thus, despite the allegations made by the Examiner, the method outlined in Figure 5 of the present specification is correct and is completely operational as stated. Therefore, the Examiner's rejection of claims 1-7 as being allegedly not enabled is incorrect and should be withdrawn. Appellants respectfully request that the Board of Patent Appeals and Interferences overturn the rejection of claims 1-7 under 35 U.S.C. § 112, first paragraph.

B. Rejection of Claim 7 under 35 U.S.C. 112, Second Paragraph

The Final Office Action rejects claim 7 under 35 U.S.C. 112, second paragraph alleging that the term "computer readable medium" is indefinite because it is not defined in the specification. This rejection is respectfully traversed.

Appellants respectfully submit that the terms in the claims must be examined in light of the level of one of ordinary skill in the art and are not to be examined in a vacuum. Those of ordinary skill in the art are well aware of what a "computer-useable medium" or "computer readable medium" is and it is not necessary to provide a specific definition of this term in the specification for this term to be definite. As is known to those of ordinary skill in the art, a computer-useable medium or computer readable medium is any medium that is capable of carrying data and/or instructions that are readable by a computing device. Examples of such computer-useable medium include floppy disks, hard disks, magnetic tape, CD-ROMs, DVD-ROMs, carrier waves, transmission media, and the like. While this term may be broad, it is definite since one of ordinary skill in the art can clearly determine what types of media fall within the scope of the term "computer-useable medium."

In response to this argument, during a March 14, 2005 telephone interview with Examiners Stevens and Shah, the Examiners merely stated that the specification must include a

definition of these terms in order for the use of these terms in the claims to be definite. The Examiners stated that the concern is with regard to whether such terms include transmission or carrier wave media.

Appellants respectfully submit that such a position completely disregards the level of one of ordinary skill in the art and instead examines the claims in a vacuum. This is clearly an erroneous approach to examination since it is stated in many places within the MPEP that the Examiner must examine the application in light of the level of skill of one of ordinary skill in the art. For example, Appellants have not defined what a "computer" is, what a "table" is, or what a "cell" of a spreadsheet is, yet one of ordinary skill in the art would understand the usage of these terms and the scope associated with these terms even though the Appellants have not presented a formal definition of these terms in the specification. The Examiner has not asserted that these terms are indefinite because one of ordinary skill in the art understands what these terms mean and what their scope is. Similarly, the terms "computer readable medium" and "computer useable medium" are well known to those of ordinary skill in the art. The MPEP even uses such terms as exemplary of claim language directed to statutory subject matter.

Whether or not the terms "computer readable medium" or "computer useable medium" encompass carrier waves or transmission media is irrelevant to a determination as to whether the terms are definite or not. Such considerations are directed to the breadth of the claim language, not to the definiteness of the claim language. Moreover, nowhere in the MPEP is there any statement that claim language directed to carrier waves or transmission medium is indefinite or defines non-statutory subject matter. To the contrary, as mentioned above, the MPEP specifically uses this language as exemplary of claim language that would define statutory subject matter.

The Examiners stated that such language that encompasses carrier waves or transmission media is considered indefinite because carrier waves and transmission media are not physical elements. Appellants respectfully disagree. Carrier waves and transmission media are physical media. While they are not immediately perceivable by the human eye, they are physical. Moreover, there is no basis in the MPEP for holding terminology indefinite for lack of physicality. In addition, there is no statement anywhere in the MPEP to the effect that carrier waves or transmission media are non-statutory. To the contrary, as set forth herein below, the

MPEP clearly states that functional descriptive material in a computer readable medium is statutory.

The MPEP does not differentiate between different types of computer readable media that are statutory and others that are not. To the contrary, the MPEP states that as long as the functional descriptive material is recorded on "some," i.e. any, computer readable media, it is statutory. The distinction between "physical" media and "non-physical" media by the Examiner is a completely subjective distinction made by the Examiner and is not based on the principles of examination set forth in the MPEP or applicable case law. Thus, the Examiner's basis for holding claim 7 indefinite is completely unfounded and should be overturned.

In view of the above, Appellants respectfully submit that claim 7 is not indefinite. Accordingly, Appellants respectfully request that the Board of Appeals and Interferences overturn the rejection of claim 7 under 35 U.S.C. § 112, second paragraph.

C. **Rejection of Claims 6-7 under 35 U.S.C. 101**

The Final Office Action rejects claims 6-7 under 35 U.S.C. 101 alleging that the claims are directed to non-statutory subject matter. This rejection is respectfully traversed.

With regard to claim 6, the Final Office Action alleges that this claim recites a computer program *per se* and thus raises a question as to whether it is directed to statutory subject matter. Claim 6 recites a "system" and has as elements "means for" performing a plurality of operations. It is not understood how a "system" can be a "computer program *per se*." To the contrary, claim 6 clearly is directed to a physical system that has elements that are capable of performing the operations specifically set forth in the claim. Figure 1A of the present application provides one example of such a system. Since claim 6 is directed to a system, it is within the technological arts and thus, is directed to statutory subject matter.

Regarding claim 7, the Final Office Action alleges that this claim is directed to a "computer readable medium" which may encompass an intangible embodiment (such as a carrier wave or transmission media). Appellants respectfully submit that computer programs embodied in computer readable media have been held to be statutory and thus, the Final Office Action is in error. As stated in the MPEP at section 2106 (IV)(B)(1), "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally

interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." As an example, in *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) a claim to a data structure stored on a computer readable medium that increases computer efficiency was held to be statutory.

In the present case, claim 7 recites a computer readable medium comprising instructions adapted for defining a Boolean attribute, said Boolean attribute having a first and a second value, assigning the first value of said Boolean attribute to each cell of a first series of cells, assigning the second value of said Boolean attribute to each cell of a second series of cells, determining in a first operation whether all the cells of said first series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share single value of said Boolean attribute, etc. as recited in claim 1. Thus, the present invention as recited in claim 7 is directed to a computer readable medium comprising instructions which permit the functions described in claim 1 to be realized. This is clearly directed to functional descriptive material embodied in a computer readable medium and thus, is statutory in accordance with the MPEP and the applicable case law.

There is no requirement in the MPEP for the media to be tangible for a "computer readable medium" or "computer useable medium" claim to be statutory. Appellants respectfully submit that the Examiner is confusing the requirement of a "useful, concrete and tangible result" of the *State Street Bank* case (*State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 1374, 47 USPQ2d 1596, 1601-02 (Fed. Cir. 1998)) with a requirement that the media itself be "tangible." As stated above in *In re Lowry*, the use of technology permits the function of the descriptive material to be realized and thus, the computer readable or computer useable medium is therefore statutory. In the case of a carrier wave or transmission media, the use of a computer is still required in order for the function of the descriptive material to be realized. Thus, even though the media itself may not be "tangible," the result is still a computer readable media with which technology permits the function of the descriptive material on the computer readable media to be realized. Thus, a useful, concrete and tangible result is obtained even if the media itself may not be "tangible."

In response to these arguments, the Examiners, in the March 14, 2005 telephone interview, essentially made the same statements as addressed above with regard to the rejection under 35 U.S.C. § 112, second paragraph, i.e. that the terms "computer readable medium" and

"computer useable medium" may encompass non-physical media and thus, would be non-statutory. As stated above, not only are carrier waves and transmission media physical, but there is no basis in the MPEP or case law to draw a distinction between different types of computer readable or computer useable media in determining whether a claim to such media is statutory. Moreover, when pressed to support such a position, the Examiners merely stated that the MPEP has been changed to not include the section, i.e. section 2106(IV)(B)(1), stating that computer readable media are statutory, and that "the case law was changing." As a result, the Examiners stated that they were going to stand by their rejection. Such a position is improper because (1) the MPEP has not, in fact, been changed and the applicable case law has not, in fact, changed; and (2) it makes Appellants have to respond to supposed case law and supposed MPEP text that is not yet in existence.

Appellants have checked their own MPEP and the MPEP available from the Patent Office website and have verified that MPEP section 2106(IV)(B)(1) has not been changed as of the time of the Final Office Action and the filing of this Brief, to eliminate the portion stating that functional descriptive material in a computer readable medium is statutory. Nor are Appellants aware of any case law that overturns the holding in *In re Lowry*. Thus, despite the Examiners' assurances that "things are changing," they have not in fact changed and the Examiners must examine the claims based on the status of the MPEP and case law at the time of the examination, not what the MPEP and case law might say in the future. If the Examiners have a basis for their position, they must clearly state what it is with particularity, rather than relying on supposed changes that may or may not be made in the future.

In view of the above, Appellants respectfully submit that all of the claims are directed to statutory subject matter. Accordingly, Appellants request that the Board of Patent Appeals and Interferences overturn the rejection of claims 6-7 under 35 U.S.C. § 101.

D. Rejection of Claims 1-7 under 35 U.S.C. 103(a)

The Final Office Action rejects claims 1-7 under 35 U.S.C. 103(a) as being allegedly unpatentable over Kelly, Using Microsoft Excel 97, 3rd Edition, Que Corp., Indianapolis, IN, 1998 in view of Deitel et al., C++: How to Program, 2nd Edition, Prentice Hall, Upper Saddle River, NJ, 1994, and further in view of Microsoft Computer Dictionary, 4th Edition, Microsoft

Press, Redmond, WA, 1999. This rejection is respectfully traversed.

Claim 1, which is representative of the other rejected independent claims 6 and 7 with regard to similarly recited subject matter, reads as follows:

> 1. A method of comparing two series of cells in a multidimensional spreadsheet comprising a plurality of cells identified by a cell address along each dimension, a series of cells comprising one or a plurality of cell range, a cell range comprising one or a plurality of cells, said method comprising the steps of:
> defining a Boolean attribute, said Boolean attribute having a first and a second value;
> assigning the first value of said Boolean attribute to each cell of a first series of cells;
> assigning the second value of said Boolean attribute to each cell of a second series of cells;
> determining in a first operation whether all the cells of said first series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share single value of said Boolean attribute;
> for a second operation, again assigning the first value of said Boolean attribute to each cell of the first series of cells;
> determining in a second operation whether all the cells of the second series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share a same single value of said Boolean attribute;
> recording intermediary information from the first operation and the second operation in a comparison table, stored in a memory of a computer;
> determining whether the first series and the second series are the same or not by comparing results of the first operation and the second operation:
> if all the cells of the first series share the same second value of said Boolean attribute in said first operation and if all the cells of the second series share the same first value of said Boolean attribute in said second operation, the first series and the second series are the same.

Appellants respectfully submit that neither Kelly, Deitel nor the Microsoft Computer Dictionary teach or suggest the specific features recited in claim 1. None of the references teach or suggest the specific methodology recited in claim 1 for comparing series of cells, as discussed hereafter.

With the present invention, as recited in claim 1, cells in a first series have their Boolean attribute set to a first value, e.g., "True." Cells in a second series have their Boolean attribute set to a second value, e.g., "False." A determination is then made as to whether all of the cells in the

first series share the same value, e.g., whether all of the cells have a Boolean attribute that is set to "True." If the second series is within the first series, the first series is within the second series, or if there is an overlap between the series, then not all of the Boolean attributes will be set to the same value.

Thereafter, in a second operation, the Boolean attribute for cells in the first series is again set to the first value, e.g., "True." Intermediary information from the first operation and the second operation is then recorded in a comparison table, e.g., the data structure shown in Figure 4, stored in a memory of a computer. A determination is made as to whether all of the Boolean attributes of cells in the second series have a same value. If all of the cells of the first series have the same Boolean attribute value in the first operation and all of the cells of the second series have the same Boolean attribute value in the second operation, then the first and second series are the same. None of the references cited in the Final Office Action teach or suggest such operations or determinations.

Kelly teaches, on pages 138-144, the use of "scenarios" and comparing "scenarios" with one another. However, the "scenarios" described in Kelly are not two series of cells that are being compared to determine if the series are the same, overlap, are within one another or are disjoined. To the contrary, the "scenarios" of Kelly are provided as an ability to set up different values for cells so that the affect of these different values may be compared. The "scenario" comparison of Kelly has nothing to do with determining a correspondence between scenarios to determine if the series are the same, overlap, etc. The scenario comparison in Kelly is merely used to compare the actual data content of the cells, not to compare series of cells to determine the structural or organizational correlation between series of cells within the spreadsheet application, such as in the present application.

Moreover, nowhere in Kelly is there any teaching or suggestion of performing the specific set of operations recited in claim 1. In other words, nowhere in Kelly is there any teaching or suggestion to associated a Boolean attribute with each cell of a first series of cells and a second series of cells, set the value of this attribute to a first value for cells in a first series, setting the value of this attribute to a second value for cells in a second series, determining if the value for this attribute is the same for all cells in the first series, resetting the value of the attribute for cells in the first series to a first value, determining if all of the cells of the second series has the same value for the attribute, etc. This is a specific set of operations recited in claim 1. Merely

teaching comparing "scenarios" in Kelly does not render obvious the specific set of operations set forth in claim 1.

The Final Office Action admits that Kelly does not teach any of the specific operations recited in claim 1 (see Final Office Action, page 8). To the contrary, the Final Office Action uses Kelly only to allegedly teach the preamble of claim 1 and defining a Boolean attribute having a first value and a second value. As stated above, Kelly does not provide any mechanism for comparing series of cells to determine their structural/organizational correlation. Moreover, despite the allegations made by the Final Office Action, Kelly actually does not teach or suggest a Boolean attribute being defined for cells of a first and second series in a spreadsheet.

The Final Office Action alleges that such a feature is taught by Kelly at pages 174-175. In this section, Kelly teaches an "IF-THEN-OTHERWISE" function that is used to determine values for cells in a spreadsheet. The "IF-THEN-OTHERWISE" function operates in the following manner: IF a statement is true, THEN return a first value, OTHERWISE return a second value. This function in Kelly essentially states that if certain criteria are met, i.e. the statement is true, then a first value is returned, otherwise if the criteria are not met, then a second value is returned. Thus, the IF-THEN-OTHERWISE function of Kelly is merely a function to determine whether a cell will be given one value or another based on whether a condition is met. The IF-THEN-OTHERWISE function of Kelly is not a Boolean variable. In fact, the IF-THEN-OTHEWISE function of Kelly is not a variable at all. It is a function that operates based on values of other variables included in the function. This is evident in that Kelly states that the IF-THEN-OTHERWISE function may be nested within other functions. Variables are not nested within other variables and thus, the function of Kelly is not a Boolean variable.

Furthermore, one cannot simply "set" the values of the IF-THEN-OTHERWISE function of Kelly to "True" or "False." To the contrary, the IF-THEN-OTHERWISE function of Kelly must evaluate the criteria set forth in the IF-THEN-OTHERWISE function to determine if the criteria are met or not. If met, some first value is returned. If not met, some second value is returned. This is clear from the example shown in Figure 10.23 of Kelly where the IF-THEN-OTHERWISE function takes the form of "=IF(B10>90, "A", IF(B10>80),"B", IF(B10>70,"C", IF(B10>60,"D","F")))." One cannot simply set the value of this function to "A," "B," "C," "D" or any other value without deleting the function. This is because once the function is associated with the cell, it must be evaluated to determine the value of the cell. One cannot merely make

the function have a certain value without modifying the variables within the function so as to achieve the desired value once the function is evaluated. Thus, the IF-THEN-OTHERWISE function of Kelly is not a Boolean variable.

In addition to the above, despite the allegations made in the Final Office Action, Deitel does not provide for the deficiencies of Kelly that have been argued above and admitted to not exist in Kelly by the Final Office Action. The Final Office Action alleges that Deitel teaches all of the specific operations set forth in claim 1 merely because Deitel teaches comparing two arrays based on their sizes. Specifically, the Final Office Action points to pages 243-244 code lines 12, 23 and 41-45, page 476, code lines 102-114. Pages 243-244, code lines 12, 23 and 41-45 read as follows:

```
12    int Ii, a[arraySize] = {0, 1, 2, 3, 4};

23    modifyArray( a, arraySize);

41    void modifyArray( int b[], int sizeOfArray)
42    {
43          for (int j = 0; j<sizeOfArray; j++)
44                b[j]*=2;
45    }
```

Page 476, code lines 102-114 read as follows:

```
102   // Determine if two arrays are equal and
103   // return true, otherwise return false.
104   bool Array::operator==(const Array &right) const
105   {
106         if (size != right.size)
107               return false;    // arrays of different sizes
108
109         for (int i = 0; i < size; i++)
110               if (ptr[i] != right.ptr[i])
111                     return false;    // arrays are not equal
112
113         return true;     //arrays are equal
114   }
```

The lines of code from pages 243-244 merely describe establishing the size of an array.

The lines of code from page 476 merely describe comparing the sizes of two arrays to determine if they are equal. Somehow, the Examiner concludes that this obviates the very specific set of operations set forth in claim 1. Where in the above lines of code, or anywhere else in the Deitel reference, is there any teaching or suggestion regarding the specific operation of assigning a first value of said Boolean attribute to each cell of a first series of cells? The Final Office Action alleges that this feature is taught by Deitel at page 243, code line 12. Nowhere in code line 12 (reproduced above) is there any Boolean attribute, let alone a function to set a Boolean attribute to a first value. To the contrary, code line 12 is used to initialize an array size. An array size is not a Boolean attribute.

Where in the above lines of code is there any teaching or suggestion of assigning a second value of a Boolean attribute to each cell of a second series of cells? The Final Office Action alleges that this feature is also taught at page 243, code line 12. Thus, according to the Examiner, not only does that single line of code set the Boolean attribute for each of a first series of cells to a first value, but also somehow sets the Boolean attribute of each of a second series of cells to a second value – even though the code line only initializes the size of an array. How can initializing the size of an array set a Boolean attribute for each cell in a first series of cells to a first value and set a Boolean attribute for each cell in a second series of cells to a second value? It can't. The Examiner is pointing to sections of the reference that have nothing to do with the features of the claim.

Where is there any teaching or suggestion of determining in a first operation whether all the cells of a first series of cells share the same first value of a Boolean attribute, or share the same second value of a Boolean attribute or do not share single value of a Boolean attribute? The Final Office Action alleges that these features are taught by Deitel at page 476, code lines 102-114, especially code line 113. The code lines pointed to by the Examiner (reproduced above) merely determine if the sizes of two arrays are equal. How does this teach to determine if every cell in a first series of cells share the same first value of a Boolean attribute or a second value of a Boolean attribute, or do not share a single value of a Boolean attribute? Once again, the portions of Deitel pointed to by the Examiner have no relation to the actual features recited in the claim. There simply is no correspondence between the code in Deitel and the operations recited in claim 1.

Where is there any second operation that again assigns a first value of a Boolean attribute to each cell of the first series of cells and determines whether all the cells of the second series of cells share the same first value of the Boolean attribute, or share the same second value of the Boolean attribute or do not share a same single value of said Boolean attribute? The Final Office Action alleges that such features are also taught by Deitel at page 476, code lines 102-114. Thus, again, not only are these code lines supposed to teach the steps of determining in a first operation whether all the cells of a first series of cells share the same first value of a Boolean attribute, or share the same second value of a Boolean attribute or do not share single value of a Boolean attribute, but are also supposed to teach again assigns a first value of a Boolean attribute to each cell of the first series of cells and determines whether all the cells of the second series of cells share the same first value of the Boolean attribute, or share the same second value of the Boolean attribute or do not share a same single value of said Boolean attribute. How is this possible? The code merely compares sizes of arrays. It has nothing to do with Boolean attributes of cells in two series of cells in a spreadsheet and thus, cannot possibly teach any of the features of the present claims.

The same feature-by-feature argument may be made for the remaining features in claim 1. In every case, the Examiner points to portions of the Deitel reference that are completely irrelevant to the actual features of the claim they are supposed to allegedly teach. In short, both Kelly and Deitel are completely devoid of any teachings or suggestions regarding the specific features of claim 1. Thus, despite the allegations made by the Final Office Action, Deitel does not actually teach anything remotely similar to the features of claim 1 and thus, the Examiner has failed to establish a prima facie case of obviousness with regard to claim 1.

Even if Deitel were somehow combinable with Kelly, the features of claim 1 would still not be taught or suggested by the alleged combination since neither reference provides any teaching or suggestion regarding the features of the present claims. Since neither Deitel nor Kelly teach or suggest the features of claim 1, any alleged combination would not magically result in these features being taught or suggested. To the contrary, if one were to attempt such a combination, and it were somehow made possible to combine the teachings of Kelly and Deitel, the result would be some mish-mash in which the size of an array of a first scenario is compared to the size of an array of a second scenario. The result still would not lead to the specific set of operations set forth in claim 1.

The Microsoft Computer Dictionary does not provide any additional teaching that would make the features of the presently claimed invention obvious in view of the teachings of Kelly and Deitel discussed above. Merely stating that Boolean values may be "True" and "False" does not provide all the teachings missing from Kelly and Deitel.

In view of the above, Appellants respectfully submit that neither Kelly, Deitel, nor the Microsoft Computer Dictionary, either alone or in combination, teach or suggest the features of independent claim 1 or similar features found in claims 6 and 7. At least by virtue of their dependency on claim 1, the alleged combination of references also does not teach or suggest the features of dependent claims 2-5. Accordingly, Appellants respectfully request that the Board of Patent Appeals and Interferences overturn the rejection of claims 1-7 under 35 U.S.C. 103(a).

In addition to the above, claims 2-5 recite additional operations not taught or suggested by the alleged combination of references. Each of claims 2-5 recite additional operations that are performed to determine the structural/organizational relationship between two series of cells. Since none of the references have anything to do with such a functionality, none of the cited reference teach or suggest the specific features recited in these claims.

For example, claim 2 recites that the step of determining whether the first series and the second series are the same or not, in claim 1, comprises the further step of determining whether the first series and the second series are disjoined or not by comparing the results of the first operation and the second operation. If all the cells of the first series share the same first value of the Boolean attribute in the first operation and if all the cells of the second series share the same second value of the Boolean attribute in the second operation, the first series and the second series are disjoined. The Final Office Action admits that Kelly does not teach these features but alleges that these features are taught by Deitel, again at page 476 code lines 102-114. Nowhere in code lines 102-114 is there anything regarding a determination as to whether two series of cells in a spreadsheet are disjoined, let alone using values of a Boolean attribute to do so. Deitel has nothing to do with determining the relationship between series of cells in a spreadsheet. Deitel only teaches comparing the sizes of two arrays.

Similarly, claim 3 recites that the step of determining whether the first series and the second series are the same or not, comprises the further step of determining whether the first series and the second series overlap or not by comparing the results of the first operation and the second operation. If all the cells of the first series do not share the same single value of the

Boolean attribute in the first operation and if all the cells of the second series do not share the same single value of the Boolean attribute in the second operation, the first series and the second series overlap. The Final Office Action admits that Kelly does not teach any of these features, but alleges that Deitel teaches these features at pages 985-986, Fig. 20.31, code lines 21-38. The code in Figure 20.31 is a searching and sorting algorithm of a standard library. Nowhere in this code is there anything regarding two series of cells or looking at the values of the Boolean attributes assigned to the cells of the two series to determine if there is overlap of the series. The code in Deitel merely performs searches and sorts. It has nothing to do with comparing series of cells. Yet again, the Examiner points to even more irrelevant code that has nothing to do with the actual features of the claim.

With regard to claim 4, this claim recites that the step of determining whether the first series and the second series are the same or not comprises the further step of determining whether the first series and the second series are included one in the other or not by comparing the results of the first operation and the second operation. Furthermore, this claim recites if all the cells of the first series share the same second value of the Boolean attribute in the first operation and if all the cells of the second series do not share the same single value of the Boolean attribute in the second operation, the first series is included in the second series. In addition, this claim recites that if all the cells of the first series do not share the same single value of the Boolean attribute in the first operation and if all the cells of the second series share the same first value of the Boolean attribute in the second operation, the second series is included in the first series. The Final Office Action again points to pages 985-986, Figure 20.31 and code lines 21-38 of Deitel as allegedly teaching these features. This section of Deitel is just as irrelevant to the features of claim 4 as it is to the features of claim 3. The cited section of Deitel has nothing to do with any of the features of claim 4 and is not even remotely similar to any mechanism such as that in claim 4 for determining whether a first series of cells in a spreadsheet and a second series of cells in a spreadsheet are included one in the other or not.

Claim 5 recites that the Boolean attribute is temporary. The cited references do not even teach this feature. The Final Office Action admits that Kelly does not teach this feature but alleges that Deitel teaches such a feature at page 147, Figure 20.31 "3.4 Functions." However, nowhere in these sections, or any other section of Deitel, is there any teaching or suggestion to have temporary Boolean attributes associated with cells in two series of cells of a spreadsheet, as

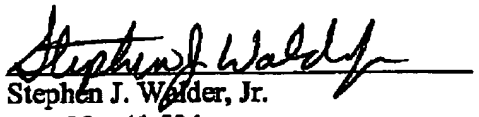
recited in claim 5. Again, the Examiner points to irrelevant portions of the reference that have nothing to do with the actual features of the claim.

Thus, in addition to being dependent upon claim 1, claims 2-5 are also distinguished over the alleged combination of references by virtue of the specific features recited in each of these claims. Therefore, Appellants respectfully request that the Board of Patent Appeals and Interferences overturn the rejection of claims 2-5 under 35 U.S.C. § 103(a).

VIII. Conclusion

In view of the above, Appellants respectfully submit that claims 1-7 of the present application are directed to statutory subject matter, are not indefinite, and that the features of these claims are not taught or suggested by the alleged combination of Kelly, Deitel and the Microsoft Computer Dictionary references. Accordingly, Appellants request that the Board of Patent Appeals and Interferences overturn the rejections set forth in the Final Office Action.

Respectfully submitted,



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CLAIMS APPENDIX

1. A method of comparing two series of cells in a multidimensional spreadsheet comprising a plurality of cells identified by a cell address along each dimension, a series of cells comprising one or a plurality of cell range, a cell range comprising one or a plurality of cells, said method comprising the steps of:

defining a Boolean attribute, said Boolean attribute having a first and a second value;

assigning the first value of said Boolean attribute to each cell of a first series of cells;

assigning the second value of said Boolean attribute to each cell of a second series of cells;

determining in a first operation whether all the cells of said first series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share single value of said Boolean attribute;

for a second operation, again assigning the first value of said Boolean attribute to each cell of the first series of cells;

determining in a second operation whether all the cells of the second series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share a same single value of said Boolean attribute;

recording intermediary information from the first operation and the second operation in a comparison table, stored in a memory of a computer;

determining whether the first series and the second series are the same or not by comparing results of the first operation and the second operation:

if all the cells of the first series share the same second value of said

Boolean attribute in said first operation and if all the cells of the second series share the same first value of said Boolean attribute in said second operation, the first series and the second series are the same.

2. The method according to claim 1 wherein the step of determining whether the first series and the second series are the same or not comprises the further step of determining whether the first series and the second series are disjoined or not by comparing the results of the first operation and the second operation:

if all the cells of the first series share the same first value of said Boolean attribute in said first operation and if all the cells of the second series share the same second value of said Boolean attribute in said second operation, the first series and the second series are disjoined.

3. The method according to claim 2 wherein the step of determining whether the first series and the second series are the same or not, comprises the further step of determining whether the first series and the second series overlap or not by comparing the results of the first operation and the second operation:

if all the cells of the first series do not share the same single value of said Boolean attribute in said first operation and if all the cells of the second series do not share the same single value of said Boolean attribute in said second operation, the first series and the second series overlap.

4. The method according to claim 3 wherein the step of determining whether the first series and the second series are the same or not comprises the further step of determining whether the first series and the second series are included one in the other or not by comparing the results of the first operation and the second operation:

if all the cells of the first series share the same second value of said Boolean attribute in said first operation and if all the cells of the second series do not share the same single value of said Boolean attribute in said second operation, the first series is included in the second series;

if all the cells of the first series do not share the same single value of said Boolean attribute in said first operation and if all the cells of the second series share the same first value of said Boolean attribute in said second operation, the second series is included in the first series.

5. The method according to claim 1 wherein said Boolean attribute is temporary.

6. A system comprising:

means for defining a Boolean attribute, said Boolean attribute having a first and a second value;

means for assigning the first value of said Boolean attribute to each cell of a first series of cells;

means for assigning the second value of said Boolean attribute to each cell of a second series of cells;

means for determining in a first operation whether all the cells of said first series of cells

share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share single value of said Boolean attribute;

for a second operation, means for again assigning the first value of said Boolean attribute to each cell of the first series of cells;

means for determining in a second operation whether all the cells of the second series of cells share the same first value of said Boolean attribute, or share the same second value of said Boolean attribute or do not share a same single value of said Boolean attribute;

means for recording intermediary information from the first operation and the second operation in a comparison table, stored in a memory of a computer;

means for determining whether the first series and the second series are the same or not by comparing results of the first operation and the second operation:

if all the cells of the first series share the same second value of said Boolean attribute in said first operation and if all the cells of the second series share the same first value of said Boolean attribute in said second operation, the first series and the second series are the same.

7. A computer readable medium comprising instructions adapted for carrying out the method according to claim 1.

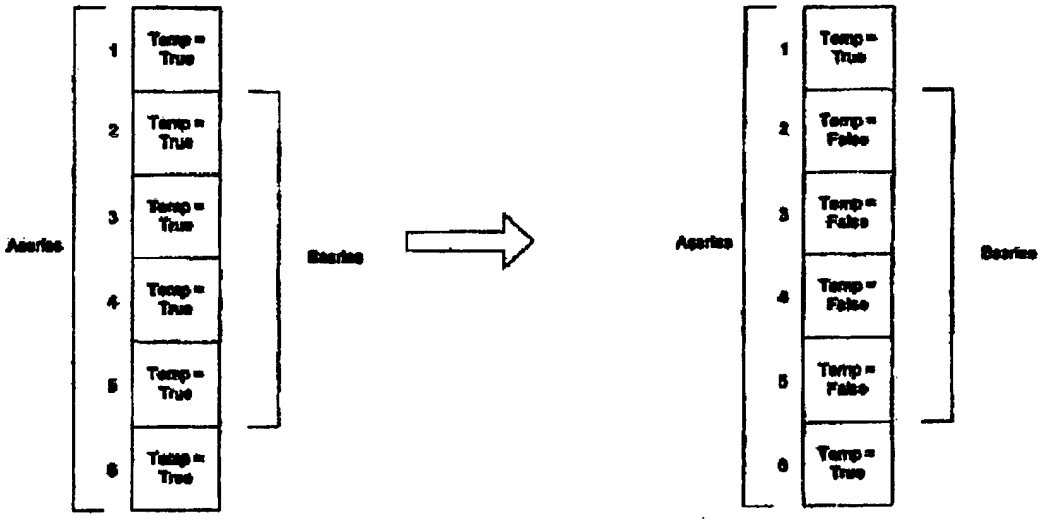
EVIDENCE APPENDIX

Initialization (step 504)

	True	False
Aseries	False	False
Bseries	False	False

(step 505)

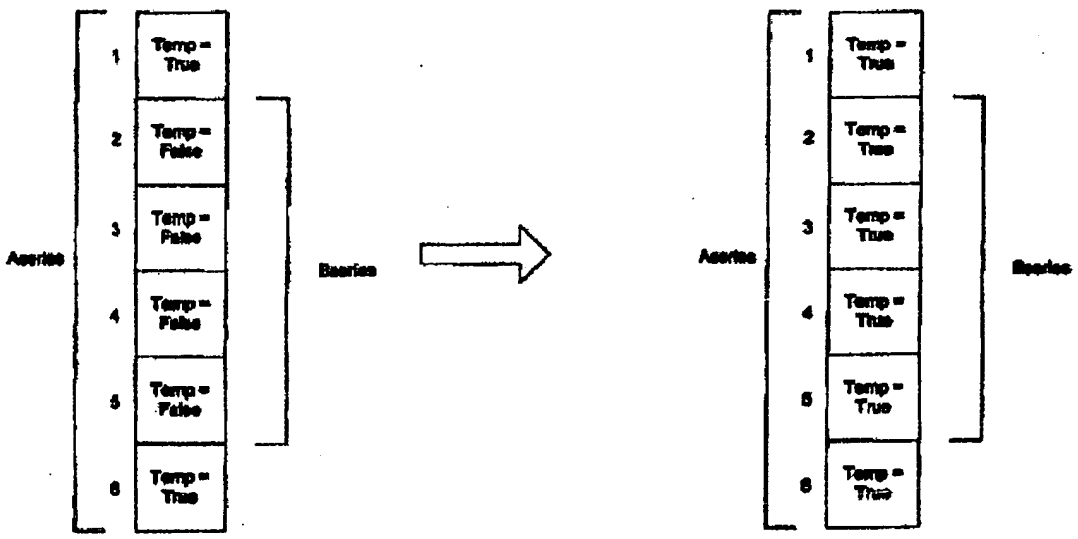
Aseries = cells 1, 2, 3, 4, 5 and 6
Bseries = cells 2, 3, 4 and 5



(steps 506-509) Aseries Temp Attributes – Some are True (cells 1 and 6) and some are false (cells 2-5) Therefore the result is "Undetermined"

	True	False
Aseries	True	True
Bseries	False	False

(step 510)



(steps 511-514) Baeries Temp Attributes – All are True
Therefore the result is "True"

	True	False
Aseries	True	True
Baeries	True	False

(steps 515-521) True/True/True/False

Comparing the above structure to those in Figure 4, the Result is "B in A" which is the correct result

RELATED PROCEEDINGS APPENDIX

NONE